FRD ACTIVITIES REPORT
June 2005

Research Programs

New York City Study

Equipment preparations for the Urban Dispersion Program scheduled for this August in New York City are well underway. The continuous analyzers are being conditioned for the project and all auxiliary systems are being checked. The programmable integrating gas samplers (PIGS) are receiving a firmware upgrade and being tested. All sample cartridges are being checked for leaky bags, cleaned and checked for contamination. Supplies have been ordered, deployment plans have been developed, and all other logistical arrangements have been made. We anticipate no problems being ready for the project. (Kirk.Clawson@noaa.gov, Roger Carter, Debbie Lacroix, Jason Rich, and Shane Beard)

Pentagon Shield

Initial information was received about the Pentagon Shield II (PS2) program to be conducted in October and November of this year. FRD is being asked to participate in both an indoor and an outdoor study. A formal request for participation will be forthcoming in July. (Kirk.Clawson@noaa.gov)

ET Probe

Progress continued on several fronts related to the ET probe. ARL is still working on getting the ET probe activities integrated into the NOAA budget planning process. Also, contact was made with Dr. James Edson's group at the University of Connecticut, who are also interested in buoy deployments for measuring fluxes. The initial discussions involved working on a joint buoy-based system that included the ET probe and Uconn's system based on a sonic anemometer. Work is also progressing with a manuscript describing the ET probe development. The plan is to have a draft completed during the summer. (Richard.Eckman@noaa.gov)

Smart Balloon

The urethane bladders used for the smart balloon have all been received and we have started testing them for leaks. We have also completely set up a balloon shell with a helium bladder, an air bladder and the outer rain covering. Each of these are identical urethane bladders. For the outer rain cover, a 36-inch diameter opening is cut out of the lower portion of a regular bladder to allow the fabric shell to be pulled inside thereby creating the rain cover. The hole is reinforced with duct tape to stop stretching or ripping. The newly created rain cover seems to be fairly durable. It has been installed and inflated several times and moved in and out of the shop area for tethered flights. It has even survived one unintended balloon flight from here to Rexburg (25

miles). The balloon and the transponder were recovered in a small pasture with very minor damage. This could be considered our first flight of the current balloon design. (Randy.Johnson@noaa.gov)

Cooperative Research with DOE NE-ID (Idaho National Laboratory)

INL Drills, Exercises, and Emergencies

FRD participated in a quarterly assessment drill held at the EOC on the 23rd of June. The table-top drill was intended to foster the cooperation of the subject matter experts in the EOC while exploring different scenarios for potential emergencies at the newly acquired Argonne National Laboratory-West (ANL-W) facility on the INL. FRD personal ran the MDIFF dispersion model and provided meteorological support. (Jason.Rich@noaa.gov)

Team C attended a requalification drill that was held at the EOC on the 30th of June. The drill was centered on the breech of a 5,500-gallon tank housing alcohol. FRD personal gave meteorological support and ran the MDIFF dispersion model during the drill. The drill went smoothly without any problems. (Neil.Hukari@noaa.gov, and Roger Carter).

Transport and Dispersion Modeling

In June, Stoller Corp. made its request for INL dispersion estimates covering calendar year 2004. This request came about a month later than has been normal in the past. These model simulations are performed with a special version of the MDIFF puff model that uses hourly average data from the INL mesonet. The results of the 2004 simulations have already been delivered to Stoller. Overall, there were no great surprises in the 2004 simulations. The 2004 concentration isopleths are consistent with the patterns observed in prior years. (Richard.Eckman@noaa.gov)

The spring season was relatively wet in Southeast Idaho this year. CFA received almost three times the normal precipitation in May. As a result, fire activity has so far been limited in Idaho. However, the spring rain has increased the vegetation growth, which may become an issue later in the summer as this vegetation cures. FRD is again preparing to provide meteorological assistance in the event of any fires at the INL. One aspect of this assistance is an ability to forecast fire spread based on meteorological conditions. A new version of the BehavePlus fire modeling system is now available, with more fire algorithms and an expanded list of fuel models. FRD staff is looking into adapting this system for INL use. (Richard.Eckman@noaa.gov)

Other Activities

Travel

Kirk Clawson, June 5-11, New York City, NY to attend the final Urban Dispersion Program planning meeting before the August deployment.